

US EPA ARCHIVE DOCUMENT



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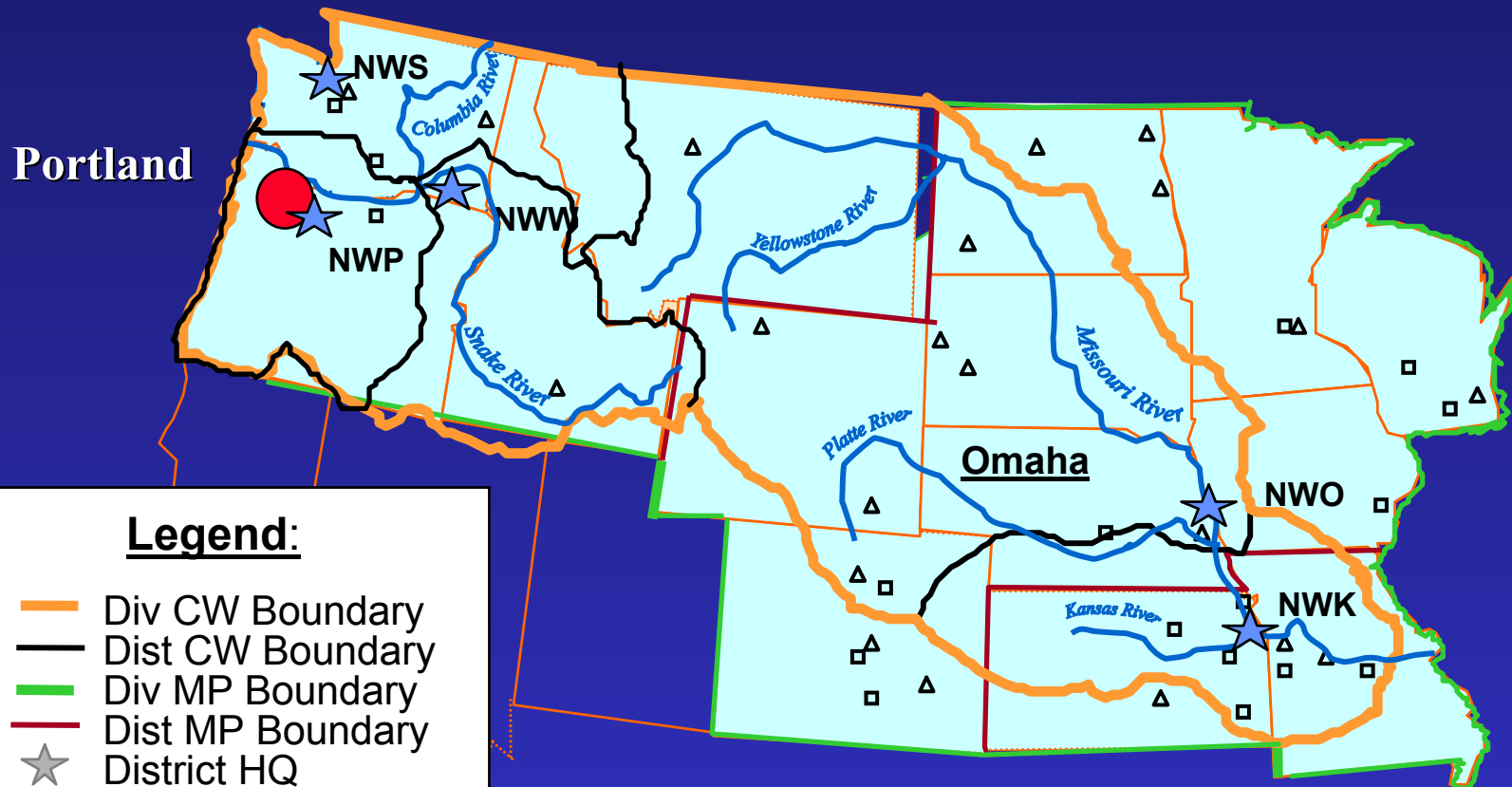
Water Quality Monitoring and Assessment Columbia and Missouri Rivers

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Legend:

- Div CW Boundary
- Dist CW Boundary
- Div MP Boundary
- Dist MP Boundary
- ★ District HQ
- Army Installation
- △ Air Force Installation

- Five Districts

- Two major river basins



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USACE Environmental Operating Principles



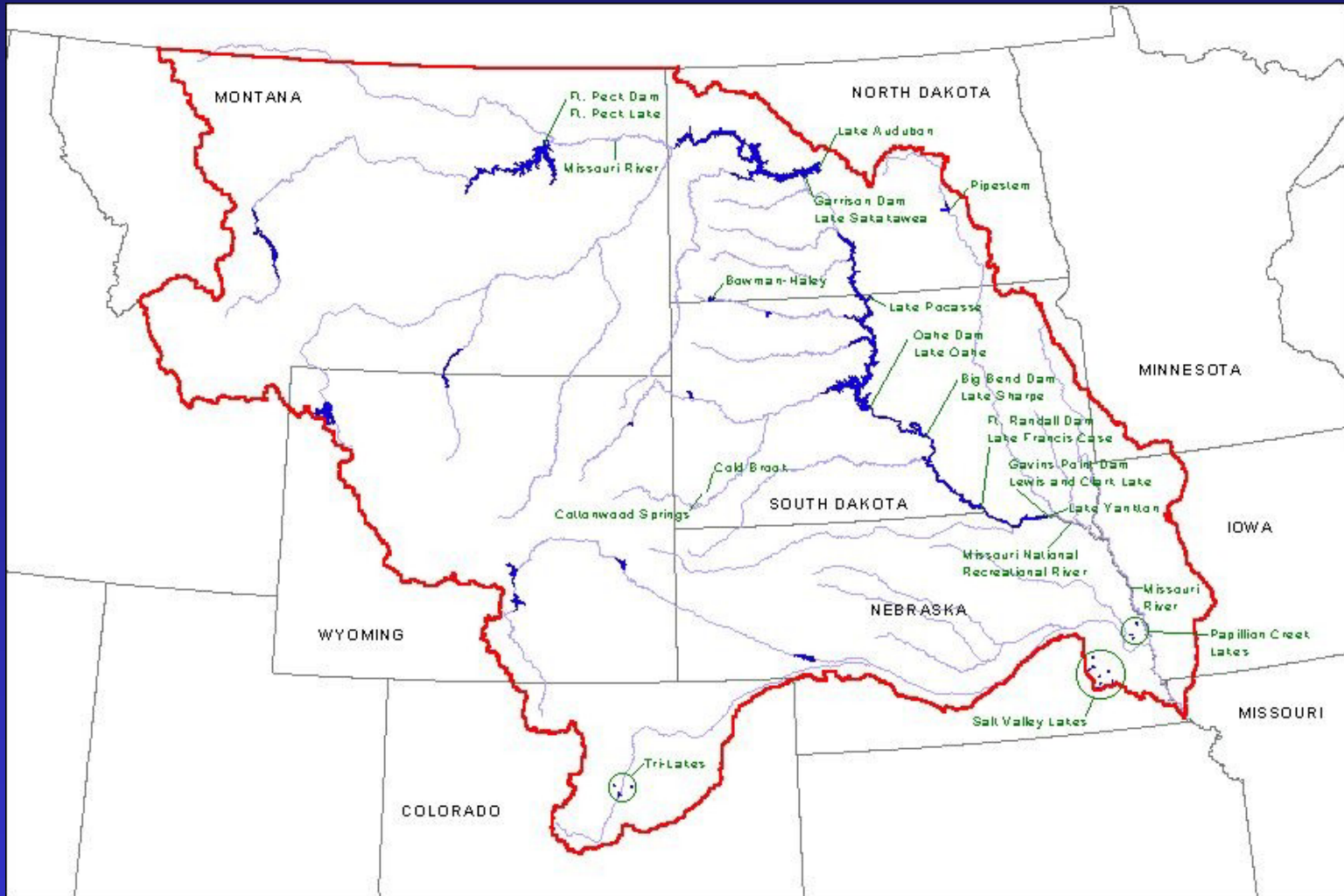
Principle #6: Build and share an integrated scientific, economic and social knowledge base that supports a greater understanding of the environment and impacts of our work.



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Missouri River





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Water Quality Monitoring



- Reservoir and release sites
- Several samples per year
- Chemical and physical parameters





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Ft. Peck

Special Assessment

- Test of warm water releases
- Temperature loggers at 17 sites
- Turbidity data
- Biological monitoring





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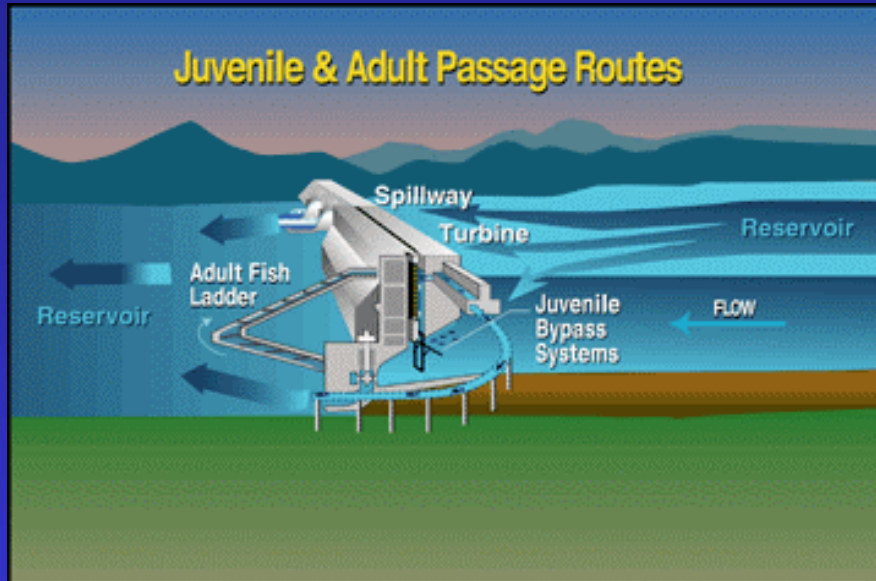


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WQ Monitoring for Daily Operations

- NMFS Biological Opinion calls for spill for fish passage
- Juvenile bypass operations linked to total dissolved gas levels





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Total Dissolved Gas Monitoring



- State standard of 110 % TDG
- BiOp recommends spill up to 120%
- Variances of state standard requires hourly monitoring





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Total Dissolved Gas Monitoring Stations



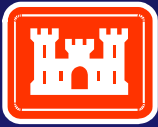


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Total Maximum Daily Loads for TDG

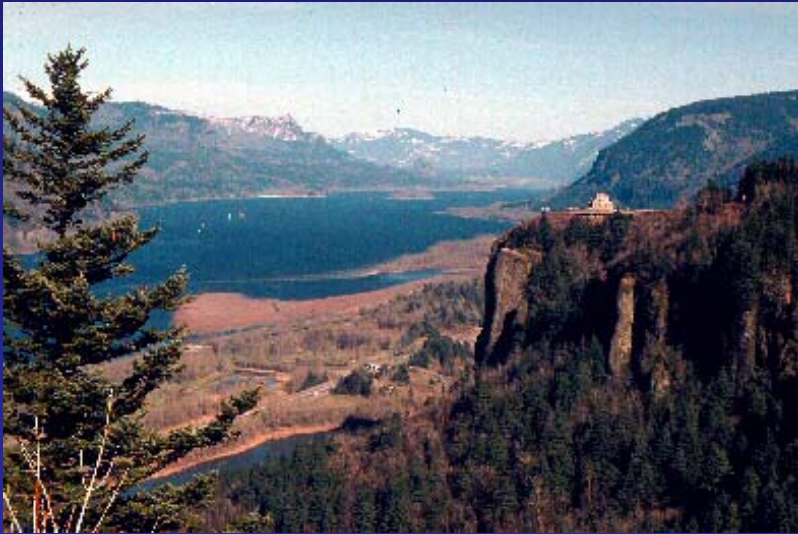
- 3 Segments
 - ◆ Lower Columbia
 - ◆ Lower Snake
 - ◆ Middle Columbia
- TDG data and Corps models used by states/EPA to develop load allocations



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Summary



Water Quality monitoring
tailored to meet the needs
of Missouri and Columbia
River Basins

Routine water quality
monitoring to assess
operations and changes
in reservoir and river
conditions





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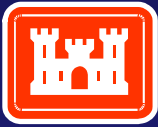


Summary

Data sharing with
other entities (e.g.
TMDLs)



Intensive monitoring of key parameters for operations



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Designing a Great River Assessment

- Monitoring tied to Corps projects – either existing operating projects or assessing new projects
- Design of monitoring plan varies and driven by assessment/model being used
- Sharing data/analysis is critical